Challenges to increase performance and reduce costs in line-focus solar technologies

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Challenges to Reduce Costs

- New solar concentrator designs (i.e. parabolic trough or linear Fresnel) to reduce the manpower requirement for manufacture and on-site assembly, as well as transport cost

Different steel structures for parabolic-trough collectors

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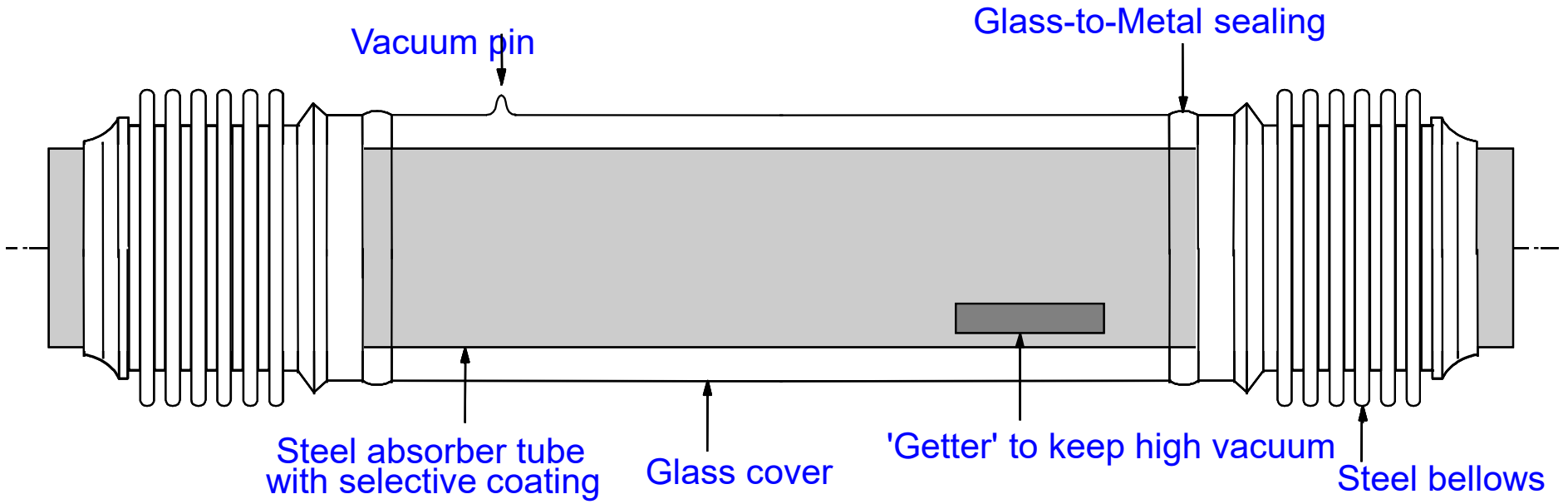
Challenges to Reduce Costs

- Development of more durable components (receiver tubes, ball-joints, ..) with lower maintenance costs and higher durability:
  - More durable receiver tubes for line-focusing systems (e.g. better glass-to-metal sealing and less H_2 permeation problems)



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- Development of more durable components (receiver tubes, ball-joints, ..) with lower maintenance costs and higher durability:
  - More durable receiver tubes for line-focusing systems (e.g. better glass-to-metal sealing and less H_2 permeation problems)
  - Improved ball-joints and flexible connections

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  - More durable receiver tubes for line-focusing systems (e.g. better glass-to-metal sealing and less H_2 permeation problems)
  - Improved ball-joints and flexible connections

- Development of new working fluids with lower environmental footprint and crystallization temperature

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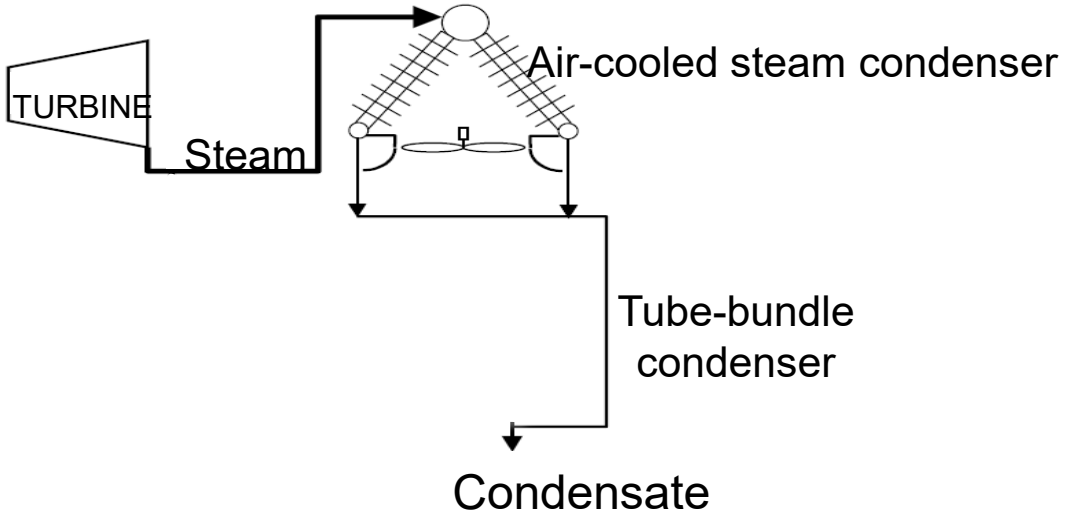
Challenges to Increase Efficiency

Cost of energy delivered by line-focus collectors can be reduced by either directly reducing CAPEX and OPEX or by increasing the efficiency while keeping the cost constant

- ✓ Improvement of dry-cooling systems to reduce their electricity consumption



- ✓ Development of new working fluids (i.e. thermal oils or salt mixtures) with higher working temperatures
- ✓ Development of turbomachinery taking into consideration the peculiarities of solar thermal power plants

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Thank you for your attention !!

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